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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,943	03/28/2001	Charles D. Snelling	F.007	2958

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DES MOINES, IA 50309-2350

[REDACTED] EXAMINER

CYGAN, MICHAEL T

[REDACTED] ART UNIT

[REDACTED] PAPER NUMBER

2856

DATE MAILED: 12/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/819,943	SNELLING ET AL.
	Examiner Michael Cygan	Art Unit 2856 <i>V</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 November 2002.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3 and 5-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 5-8 is/are allowed.
- 6) Claim(s) 1-3 and 9-17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Oath/Declaration

1. Applicant has not given a post office address anywhere in the application papers as required by 37 CFR 1.33(a), which was in effect at the time of filing of the oath or declaration. A statement over applicant's signature providing a complete post office address is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 9-11, and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Petersen (US 3,485,100). Petersen discloses the claimed invention, a detector assembly [5] including a thermally conductive substrate [30] on which is mounted a heater [33] and an elongated temperature-dependent resistance sensor [34] in such a way that the heater adds heat to the vessel and the sensor element responds to temperatures at discrete vertical elevations of the vessel; see Figures 1 and 5; column 4, lines 29-38. An analog processor electrically connected to the sensor receives the temperature signal and generating a level

signal with the help of liquid level measuring equipment; see column 3, line 72 through column 4, line 5. The level is interfaced electrically to indicator means; see column 1, lines 27-32. A power source [14] is electrically connected to the level measuring apparatus and measurement circuit. The temperature signal is proportional to the magnitude of the resistance; see column 3, lines 19-66. Upper and lower temperature-dependent resistance sensors [26,29] can be used to surround an elongated temperature-dependent resistance sensor [27 or 28]. The sensor measures electromotive force of the current supplied by the power source [14] across a resistor [34] and is therefore a potentiometer. Petersen additionally discloses the method of providing the substrate, mounting the heater and sensor upon it, and electrically connecting the components; see entire document, particularly column 3, line 72 through column 4, line 5.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen (US 3,485,100) in view of Sergeant (US 3,461,446). Petersen

teaches the claimed invention except for positioning the lower end of the sensor above the lower inner surface of the vessel by a vertical clearance such that the processor interprets the elevation signal to be relative to the lower inner surface of the vessel. Sergeant teaches a temperature resistance liquid level sensor which is mounted at a predetermined point above the bottom of the chamber and provides a signal when the liquid level, i.e., the elevation of the surface relative to the bottom of the vessel, reaches that point; see column 2, lines 1-39. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a mounting at a predetermined point above the bottom of the chamber as taught by Sergeant in the invention taught by Petersen to mount the sensor such that a signal can be sensed when liquid level reaches a certain vertical point, since both Sergeant and Petersen teach triggering of a fill valve when liquid is desired to reach a certain height and the orientation of Sergeant provides a vertical point of reference which would be useful in setting a triggering point in the invention of Petersen.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen (US 3,485,100) in view of Wallrafen (US 5,719,332). Petersen teaches the claimed invention except for microprocessor control. Wallrafen teaches the use of microprocessor control of the signals generated by an elongated temperature-resistance liquid level sensor; see

Figure 1 and column 4, lines 35-62. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a microprocessor as taught by Wallrafen in the invention taught by Petersen to form the control circuit, since Wallrafen teaches that microprocessors can replace analog control circuitry, and microprocessors provide such advantages as ease of programming and reprogramming and data input/output control.

Allowable Subject Matter

5. Claims 5-8 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter: The prior art neither discloses nor fairly teaches the use of the claimed formula being programmed into a microprocessor used as a liquid level sensor having the claimed attributes.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
8. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first

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reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Response to Arguments

9. Applicant's arguments with respect to claims 1-3 and 9-17 have been considered but are moot in view of the new ground(s) of rejection. Applicant's communication of 31 October 2002 (paper #7) did not provide a post office address for the applicant Van Lahr.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is 703-305-0846. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 703-305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.

MTC

mtc

December 12, 2002

Hezron S. Williams
HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800